



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,524	11/28/2001	Arnold J. Gum	990213	3567

23696 7590 08/12/2004

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

D AGOSTA, STEPHEN M

ART UNIT	PAPER NUMBER
2683	8

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/996,524

Applicant(s)

GUM, ARNOLD J.

Examiner

Stephen M. D'Agosta

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-74 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-30, 39-59 and 67-74 is/are rejected.
- 7) ☒ Claim(s) 32-38 and 60-66 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u> </u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 6-26-03 is in compliance and accordingly, the information disclosure statement is being considered by the examiner.

Drawings

The formal drawings were received on 4-12-02. These drawings are have been reviewed by the drafts person and examiner.

Claim Objections

Claim 66 objected to because of the following informalities: This claim is missing based on a claim-numbering error (there are only 73 claims present). Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 10-14, 17, 19-25, 40-46, 56 and 58-59 rejected under 35

U.S.C. 102(b) as being anticipated by Masao JP11015498 (hereafter Masao).

As per **claim 1**, Masao teaches an apparatus for providing a custom profile in a wireless device (Abstract teaches transmission means and figure shows an antenna for wireless communication #20), comprising:

A memory into which at least one criterion is entered by a user of the wireless device (Abstract teaches voice color data storage #40);

A receiver that receives an audio signal (abstract teaches processing both the read voice color data and transmitter's speech signal which inherently requires receiving the transmitter's speech signal. The examiner notes that the figure shows both input

Art Unit: 2683

and output ports, #11 and #15 for inputting/outputting of audio signals since they are connected to A/D and D/A converters for appropriate conversion of analog audio to digital signal);

A comparator that receives the audio signal from said receiver, and that receives at least a first of the least one criterion from said memory, wherein said comparator compares the audio signal to the first criterion, and wherein said comparator outputs at least one result of the comparison (abstract teaches a “voice transformation means” that processes the inputted/received voice with the selected voice color data/criterion); and

An adjustor that adjusts the audio signal based on the result of said comparator (Abstract teaches changing the inputted voice to an outputted voice that is adjusted per the selected voice color data).

As per **claim 2**, Masao teaches claim 1 wherein the first criterion is a voice profile (abstract teaches voice color data which the user can select from, eg. they select which profile they wish to use).

As per **claim 3**, Masao teaches claim 2 wherein the first criterion is a voice profile of the user (abstract teaches using a plurality of voice utterers as voice color data/profiles, hence one of the plurality would be the user’s own voice, eg. use your own voice or someone elses).

As per **claim 4**, Masao teaches claim 2 wherein the first criterion is a voice profile for a remote caller to the wireless device (abstract teaches changing the transmitted or received speech, which reads on a voice profile for a remote caller to the device).

As per **claim 10**, Masao teaches claim 1 wherein said adjuster is automated (abstract teaches the user selecting a criterion and the adjuster being automated to perform the function of voice alteration).

As per **claim 11**, Masao teaches claim 10 wherein said adjustor is a signal processor (figure 1 teaches a DSP #230).

As per **claim 12**, Masao teaches claim 1 wherein the user of the wireless device controls said adjustor (abstract teaches the user selecting a criterion and the adjuster performing the function of voice alteration – hence the user is inherently controlling the adjuster via the selection criterion to alter the voice output).

As per **claim 13**, Masao teaches claim 12 wherein the at least one criterion is a filtering combination (Abstract teaches transformation means that processes the read voice color data with the transmitter’s speech and thus “filters” the two voices together to form one outputted voice).

Art Unit: 2683

As per **claim 14**, Masao teaches claim 13 wherein the filtering combination changes voice characteristics of the user (Abstract teaches changing the transmitter's or receiver's voice into that of another person).

As per **claim 17**, Masao teaches claim 1 wherein the at least one criterion is entered by the user of the wireless device (abstract teaches the user selecting which voice color data they wish to use from the plurality stored on the wireless device).

As per **claim 19**, Masao teaches claim 1 wherein said memory is a RAM (Abstract teaches storage which is interpreted as RAM).

As per **claim 20**, Masao teaches claim 1 wherein the at least one criterion is entered by the user pressing a key to select an audio filter (Abstract teaches the user selecting which voice color to use and the title teaches a telephone device which inherently have buttons/keys for the user to depress).

As per **claim 21**, Masao teaches claim 1 wherein the at least one criterion is entered by the user selecting a previously adjusted audio signal configuration for the adjustor (Abstract teaches storing voice color data that the user can select – hence one skilled understands that the user can select a previously adjusted audio signal configuration for the adjustor by selecting a previously used voice color data).

As per **claim 22**, Masao teaches claim 1 wherein said receiver includes a mouthpiece of the wireless device (figure 1 shows both earpiece and mouthpiece of the phone, #11 and #15 which are well known to provide input/output to/from the phone).

As per **claim 23**, Masao teaches claim 1 wherein said receiver includes an antenna of the wireless device (figure 1 shows an antenna #20).

As per **claim 24**, Masao teaches claim 1 wherein said comparator includes a digital processor (figure 1 shows DSP processor #30).

As per **claim 25**, Masao teaches claim 1 wherein said adjustor is a filtering system (Abstract teaches combining transmitter's voice with stored voice color data and "filtering" them together to get a new outputted voice).

As per **claim 40**, Masao teaches an apparatus for providing a custom profile in a wireless device (Abstract teaches transmission means and figure shows an antenna for wireless communication #20), comprising:

A memory into which at least one criterion is entered by a user of the wireless device (Abstract teaches voice color data storage #40);

A receiver that receives an audio signal (abstract teaches processing both the read voice color data and transmitter's speech signal which inherently requires receiving the transmitter's speech signal. The examiner notes that the figure shows both input

Art Unit: 2683

and output ports, #11 and #15 for inputting/outputting of audio signals since they are connected to A/D and D/A converters for appropriate conversion of analog audio to digital signal);

A means for comparing that receives the audio signal from said receiver, and that receives at least a first of the least one criterion from said memory, wherein said means for comparing compares the audio signal to the first criterion, and wherein said means for comparing outputs at least one result of the comparison (abstract teaches a "voice transformation means" that processes the inputted/received voice with the selected voice color data/criterion); and

A means for adjusting that adjusts the audio signal based on the result of said comparator (Abstract teaches changing the inputted voice to an outputted voice that is adjusted per the selected voice color data).

As per claim 41, Masao teaches an method of modifying an audio profile in a wireless device (Abstract teaches selecting from a plurality of voice color data, transmission means and figure shows an antenna for wireless communication #20), comprising:

Entering, by a user of the wireless device, of a first criterion (Abstract teaches voice color data storage #40);

Comparing an audio signal received by the wireless device to the first criterion (abstract teaches processing both the read voice color data and transmitter's speech signal which inherently requires receiving the transmitter's speech signal. The examiner notes that the figure shows both input and output ports, #11 and #15 for inputting/outputting of audio signals since they are connected to A/D and D/A converters for appropriate conversion of analog audio to digital signal);

Adjusting the audio signal based on said comparing (abstract teaches a "voice transformation means" that processes the inputted/received voice with the selected voice color data/criterion); and

Playing the adjusted audio signal to the user or broadcasting the adjusted audio signal to a remote caller (Abstract teaches changing the inputted voice to an outputted voice that is adjusted per the selected voice color data).

As per claim 42, Masao teaches claim 41 wherein said adjusting is performed automatically by the device (abstract teaches the user selecting a criterion and the adjuster being automated to perform the function of voice alteration).

As per claim 43, Masao teaches claim 41 wherein said adjusting is performed by filtering the audio signal (Abstract teaches combining transmitter's voice with stored voice color data and "filtering" them together to get a new outputted voice).

As per claim 44, Masao teaches claim 41 wherein said adjustor is a signal processor (figure 1 teaches a DSP #230).

Art Unit: 2683

As per **claim 45**, Masao teaches claim 41 wherein said adjusting is responsive to an input from the user of the wireless device (abstract teaches user selecting voice color data) and wherein the input from the user is based on at least one result of said comparing (abstract teaches user selecting voice color data which the user may want to change based on the outputted voice, eg. they don't like it so they wish to change it, and hence the user's input is based on at least one result of the comparing).

As per **claim 46**, Masao teaches claim 45 further comprising the user receiving the at least one result of said comparing by providing of feedback to the user, the feedback being of at least one result of said comparing (abstract teaches user selecting a voice color data and may wish to change it based on not liking the voice outputted).

As per **claim 56**, Masao teaches claim 41 wherein said comparing comprises evaluating the audio signal against at least one stored recognition template (abstract teaches storing a plurality of utterers voice color data that can be selected for comparison to the transmitter's voice so that they are combined into a "new voice". Hence the transmitter's voice and selected voice are evaluated and combined into a new voice – one skilled would ensure/evaluate that the two voices are not the same).

As per **claim 58**, Masao teaches claim 56 wherein the stored recognition template is a user desired speech profile (abstract teaches a plurality of utterers voice color data being stored and selected).

As per **claim 59**, Masao teaches claim 56 wherein evaluating comprises statistically comparing and assigning a percent variance of the audio signal from the stored recognition template (Abstract teaches the user selecting a voice color data which is combined with their voice so as to change the user's voice which requires the two "voices" to be statistically combined so that a final outputted voice is attained).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 18, 29, 31 and 47 rejected under 35 U.S.C. 103(a) as being unpatentable over Masao.

As per **claim 7**, Masao teaches claim 1 **but is silent on** further comprising an output display that provides feedback to the user of at least one result from said comparator.

Masao teaches a wireless phone (figure 1 shows antenna and title regards a "telephone device") and the examiner notes that virtually all cellular phones provide a display means to provide visual feedback to the user regarding mode and/or call information. Hence one skilled would provide a display to provide feedback to the user regarding audio profile selection.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that it comprises an output display that provides feedback to the user of at least one result from said comparator, to provide means for the user to understand what selections they have made regarding audio profile.

As per **claim 18**, Masao teaches claim 1 **but is silent on** wherein the at least one criterion is sent to the wireless device from a remote caller to the wireless device.

Masao teaches changing the voice that is transmitted or received which one skilled would adapt for allowing the remote caller to send.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that the criterion is sent from a remote caller, to provide means for the remote caller to have their voice changed at the called party's phone so they cannot be identified (eg. similar to CALLER-ID blocking but the voice is changed).

As per **claim 29**, Masao teaches claim 1 and first criterion is at least one stored voice data (abstract teaches voice color data being stored/selected) **but is silent on** a recognition template.

Masao teaches storing voice color data which reads on a stored template since it represents stored values/procedures (eg. a template) as to how the device is to adjust the transmitter's voice to be changed.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, a recognition template is used, to provide means

Art Unit: 2683

for storing any/all data required by the system to change a transmitter's/receiver's voice into a "file" and/or template.

As per **claim 31**, Masao teaches claim 29 wherein the stored recognition template is a user desired speech profile (abstract teaches storing a plurality of utterers voice color data being stored and selected).

As per **claim 47**, Masao teaches claim 46 **but is silent on** wherein said providing of feedback is performed by displaying an icon to the user on a display screen of the wireless device.

Masao teaches a wireless phone (figure 1 shows antenna and title regards a "telephone device") and the examiner notes that virtually all cellular phones provide a display means to provide visual feedback to the user regarding mode and/or call information. Hence one skilled would provide a display to provide feedback to the user regarding audio profile selection.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that it comprises an output display that provides feedback to the user of at least one result from said comparator, to provide means for the user to understand what selections they have made regarding audio profile.

Claims 5, 68-74 rejected under 35 U.S.C. 103(a) as being unpatentable over Masao as applied to claims 1, 41 above and/or claim 69 below, and further in view of Nordenstrom US 5,668,868 (hereafter Nordenstrom).

As per **claim 5**, Masao teaches claim 1 **but is silent on** further comprising an audio player that plays back the audio signal after the audio signal is received, and again after the audio signal is adjusted.

Nordenstrom teaches a memorandum recorder includes a recorder unit and a speaker (24) with an associated volume control dial (26). An input jack (16) is used for accepting a communication line coupled to the telephone (17). An output jack (20) is used for accepting a communication line (22) coupled to a telecommunications device. The memory comprises an EPROM which is situated within an interior space of the housing (12) and adapted to store audio signals. A controller is coupled to the input and output jacks, the memory and the speaker. The controller allows communication between the input and output jacks, in a first mode of operation. Storage of audio signals from a mouthpiece of the telephone is allowed in a second mode of operation, upon depression of a record button. Playback of the stored audio signals, via the speaker, is allowed in a third mode of operation (abstract and figures 1-9).

Hence one skilled would provide for the user to change voice characteristics and record them for playback thus allowing the user to review the voice changes and modify them until they like the new.

Art Unit: 2683

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such it comprises an audio player that plays back the audio signal after the audio signal is received, and again after the audio signal is adjusted, to provide means for the user to continually modify changes to their voice until they like the "new voice" before they actually use the new voice in a phone call.

As per claim 68, Masao teaches claim 41 but is silent on further comprising delaying, between said entering and said playing, to allow prevention of sound interaction between the user entering by speaking and the user playing by playing back a recording of said entering.

Nordenstrom teaches a memorandum recorder includes a recorder unit and a speaker (24) with an associated volume control dial (26). An input jack (16) is used for accepting a communication line coupled to the telephone (17). An output jack (20) is used for accepting a communication line (22) coupled to a telecommunications device. The memory comprises an EPROM which is situated within an interior space of the housing (12) and adapted to store audio signals. A controller is coupled to the input and output jacks, the memory and the speaker. The controller allows communication between the input and output jacks, in a first mode of operation. Storage of audio signals from a mouthpiece of the telephone is allowed in a second mode of operation, upon depression of a record button. Playback of the stored audio signals, via the speaker, is allowed in a third mode of operation (abstract and figures 1-9).

Hence one skilled would provide for the user to change voice characteristics and record them for playback thus allowing the user to review the voice changes and modify them until they like the new.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that it comprises delaying, between said entering and said playing, to allow prevention of sound interaction between the user entering by speaking and the user playing by playing back a recording of said entering, to provide means for the user to continually modify changes to their voice until they like the "new voice" before they actually use the new voice in a phone call.

As per claim 69, Masao teaches a method of modifying an audio signal/profile in a wireless device (abstract), comprising the steps of:

- c) having the user to selectively apply filtering to the played back audio signal (abstract teaches the user can select a voice color data)
 - d) filtering the audio signal according to said polling of the user (abstract teaches the system adjusting the transmitter's voice with the voice color data)
 - g) applying the audio profile to the subsequent audio signal (abstract teaches a new voice is outputted based upon the user's selection of voice color data)
- but is silent on
- a) recording an audio signal
 - b) playing back the audio signal to the user of the wireless device
 - e) playing back the filtered audio signal to the user

Art Unit: 2683

f) repeating steps (c)-(e) until the user elects, upon said polling, to retain a then current filtering configuration, which then the current filtering configuration comprises the audio profile.

Nordenstrom teaches a memorandum recorder includes a recorder unit and a speaker (24) with an associated volume control dial (26). An input jack (16) is used for accepting a communication line coupled to the telephone (17). An output jack (20) is used for accepting a communication line (22) coupled to a telecommunications device. The memory comprises an EPROM which is situated within an interior space of the housing (12) and adapted to store audio signals. A controller is coupled to the input and output jacks, the memory and the speaker. The controller allows communication between the input and output jacks, in a first mode of operation. Storage of audio signals from a mouthpiece of the telephone is allowed in a second mode of operation, upon depression of a record button. Playback of the stored audio signals, via the speaker, is allowed in a third mode of operation (abstract and figures 1-9).

Hence one skilled would provide for the user to change voice characteristics and record them for playback thus allowing the user to review the voice changes and modify them until they like the new.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that steps a, b, e and f are performed, to provide means for the user to continually modify changes to their voice until they like the "new voice" before they actually use the new voice in a phone call.

As per **claim 70**, Masao in view of Nordenstrom teaches claim 69 but is silent on wherein the user selectively applies filtering by pressing a numbered key on the wireless device.

Masao teaches the user selecting from the plurality of voice color data stored which one skilled would provide as requiring either multiple buttons being depressed or one hotkey-like button being depressed.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao in view of Nordenstrom, such that the user selectively applies filtering by pressing a numbered key on the wireless device, to provide means for a user to select a voice profile/signal via pressing a button on the phone's keypad.

As per **claim 71**, Masao in view of Nordenstrom teaches claim 70 wherein the numbered key corresponds to a pre-stored speech template (abstract teaches storing of a plurality of utterer's voice color data which can be selected, via keypad, by the user).

As per **claim 72**, Masao in view of Nordenstrom teaches claim 69 wherein the audio signal is an incoming audio signal to the wireless device from a remote caller (abstract teaches changing the transmitted or received speech, where "received" reads on remote caller).

Art Unit: 2683

As per **claim 73**, Masao in view of Nordenstrom teaches claim 69 wherein the audio signal is an outgoing audio signal from the wireless device to a remote caller (abstract teaches changing the transmitted or received speech, where "transmitted" reads on an outgoing call from the wireless device to a remote caller).

As per **claim 74**, Masao in view of Nordenstrom teaches claim 69 wherein the subsequent audio signal is an outgoing call from the wireless device to a remote caller (abstract teaches changing the transmitted or received speech, where "transmitted" reads on an outgoing call from the wireless device to a remote caller).

Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Masao as applied to claim 1 and further in view of Nordenstrom and Komiya US 6,510,208 (hereafter Nordenstrom and Komiya).

As per **claim 6**, Masao teaches claim 1 **but is silent on** further comprising an audio player that plays audio signal from a remote caller to the wireless device to the user after the audio signal is adjusted.

Nordenstrom teaches a memorandum recorder includes a recorder unit for recording user inputted audio. **Komiya** teaches recording or received audio data from a remote caller (see claim 1). Hence, one skilled would use a recording device for both user-received and/or remote caller-received data.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that it comprises an audio player that plays audio signal from a remote caller to the wireless device to the user after the audio signal is adjusted, to provide means for recording both user-received and/or remote caller-received data.

Claims 8-9, 15-16, 26-27, 30, 39, 48-54, 57 and 67 rejected under 35 U.S.C. 103(a) as being unpatentable over Masao as applied to claims 1, 41 above and/or claim 69 below, and further in view of McLoughlin et al. GB2343822 (hereafter McLoughlin).

As per **claim 8**, Masao teaches claim 1 **but is silent on** wherein the at least one criterion is understandability.

McLoughlin teaches use of a filter/processor to alter frequency characteristics of speech to improve intelligibility (eg. understandability) [Abstract and page 1, L29-34].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that the at least one criterion is understandability, to provide means for increasing understandability of the transmitted voice signal.

Art Unit: 2683

As per **claim 9**, Masao teaches claim 1 **but is silent on** wherein the at least one criterion is clarity.

McLoughlin teaches use of a filter/processor to alter frequency characteristics of speech to improve intelligibility (eg. clarity) [Abstract and page 1, L29-34].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that the at least one criterion is clarity, to provide means for increasing clarity of the transmitted voice signal.

As per **claim 15**, Masao teaches claim 1 **but is silent on** wherein the at least one criterion is variance from a pre-determined normal value.

McLoughlin teaches examination of background noise and adjusting the voice based on this value, which reads on variance from a pre-determined normal value, eg. no noise present).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that the at least one criterion is variance from a pre-determined normal value, to provide means for measuring/checking that operational parameters are within predetermined normal ranges thus ensuring optimal communications occurs.

As per **claim 16**, Masao teaches claim 1 **but is silent on** wherein the at least one criterion is recognizability.

McLoughlin teaches use of a filter/processor to alter frequency characteristics of speech to improve intelligibility (eg. recognizability) [Abstract and page 1, L29-34].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that the at least one criterion is recognizability, to provide means for increasing a party-to-the-call's ability to identify the caller.

As per **claim 26**, Masao teaches claim 1 **but is silent on** wherein the first criterion is clarity of at least one consonant pronunciation.

McLoughlin teaches changing frequency of the voice signal which is interpreted as changing the Treble/Bass level of the voice signal. Hence, one can adjust the Treble/Bass of the received signal to better identify what consonant(s) or word(s) are being spoken.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that the first criterion is clarity of at least one consonant pronunciation, to provide means for the user to adjust Treble/Bass frequencies to better understand what consonant(s)/word(s) are being spoken.

As per **claim 27**, Masao teaches claim 1 **but is silent on** wherein the first criterion is compensation for a hearing deficiency of the user.

McLoughlin teaches altering the voice data if background noise is present which reads on a hearing deficiency of the user since the noise would prevent them from

Art Unit: 2683

hearing the received voice signal (abstract). Also, simply adjusting the volume would assist a person with a hearing deficiency to hear the received voice signal better.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to Masao, such that the first criterion is compensation for a hearing deficient user, to provide means for a hearing-impaired person to operate the phone more easily than a "normal phone" (eg. does not contain correction circuitry).

As per **claim 30**, Masao teaches claim 29 wherein the adjustor runs the audio signal through free-form voice modification filtering (abstract teaches processing transmitter's voice with selected voice color data to change it) **but is silent on** to heighten understandability and reduce variance from the at least one stored recognition template.

McLoughlin teaches heightening understandability by reducing the amount of background noise (eg. variance from zero noise present) which improves intelligibility.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that it heightens understandability and reduces variance from the at least one stored recognition template, to provide means for assisting the parties-to-the-call to better understand and identify the people on the call.

As per **claim 39**, Masao teaches claim 20 **but is silent on** wherein each stored recognition template corresponds to a key on a keypad of the wireless device.

Masao teaches the user selecting from the plurality of voice color data stored which one skilled would provide as requiring either multiple buttons being depressed or one hotkey-like button being depressed.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that each stored recognition template corresponds to a key on a keypad of the wireless device, to provide means for the user to push a button to change their voice profile/signature.

As per **claim 48**, Masao teaches claim 41 **but is silent on** wherein the at least one criterion is understandability.

McLoughlin teaches use of a filter/processor to alter frequency characteristics of speech to improve intelligibility (eg. understandability) [Abstract and page 1, L29-34].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that the at least one criterion is understandability, to provide means for increasing understandability of the transmitted voice signal.

As per **claim 49**, Masao teaches claim 41 **but is silent on** wherein the at least one criterion is clarity.

McLoughlin teaches use of a filter/processor to alter frequency characteristics of speech to improve intelligibility (eg. clarity) [Abstract and page 1, L29-34].

Art Unit: 2683

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that the at least one criterion is clarity, to provide means for increasing clarity of the transmitted voice signal.

As per **claim 50** Masao teaches claim 41 but is silent on wherein the criterion is variance from a predetermined normal value.

McLoughlin teaches examination of background noise and adjusting the voice based on this value, which reads on variance from a pre-determined normal value, eg. no noise present).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that the at least one criterion is variance from a pre-determined normal value, to provide means for measuring/checking that operational parameters are within predetermined normal ranges thus ensuring optimal communications occurs.

As per **claim 51**, Masao teaches claim 41 but is silent on wherein the at least one criterion is recognizability.

McLoughlin teaches use of a filter/processor to alter frequency characteristics of speech to improve intelligibility (eg. recognizability) [Abstract and page 1, L29-34].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that the at least one criterion is recognizability, to provide means for called/calling parties to better identify the person on call.

As per **claim 52**, Masao teaches claim 41 but is silent on boosting a particular frequency of the audio signal.

McLoughlin teaches use of a filter/processor to alter frequency characteristics of speech and reads on boosting a particular frequency [Abstract and page 1, L29-34].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to Masao, such that it boosts a particular frequency of the audio signal, to provide means for optimal transmission/reception of the signal.

As per **claim 53**, Masao teaches claim 52 but is silent on wherein an upper frequency is boosted to improve clarity of at least one consonant pronunciation.

McLoughlin teaches use of a filter/processor to alter frequency characteristics of speech and reads on boosting a particular frequency [Abstract and page 1, L29-34]. The examiner notes that boosting a higher frequency (eg. increasing Treble) allows a voice signal to be more clear as opposed to boosting a lower frequency (eg. increasing Bass).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, to boost frequency which improves clarity (of at least one consonant), to provide means for better RF transmission/reception so that caller/called party can better understand each spoken word.

Art Unit: 2683

As per **claim 54**, Masao teaches claim 52 **but is silent on** wherein the particular frequency is boosted to compensate for a hearing deficiency of the user.

McLoughlin teaches use of a filter/processor to alter frequency characteristics of speech and reads on boosting a particular frequency [Abstract and page 1, L29-34]. The examiner notes that boosting a higher frequency (eg. increasing Treble) allows a voice signal to be more clear as opposed to boosting a lower frequency (eg. increasing Bass). Increased Treble would help a hearing deficient person to hear the transmitted/received voice better.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to Masao, such that frequency is boosted to compensate for hearing deficient person, to provide means for a hearing impaired person to better understand a phone conversation.

As per **claim 57**, Masao teaches claim 56 wherein the adjustor runs the audio signal through free-form voice modification filtering (abstract teaches processing transmitter's voice with selected voice color data to change it) **but is silent on** to heighten understandability and reduce variance from the at least one stored recognition template.

McLoughlin teaches heightening understandability by reducing the amount of background noise (eg. variance from zero noise present) which improves intelligibility.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that it heightens understandability and reduces variance from the at least one stored recognition template, to provide means for assisting the parties-to-the-call to better understand and identify the people on the call.

As per **claim 67**, Masao teaches claim 56 **but is silent on** wherein each stored recognition template corresponds to a key on a keypad of the wireless device further comprising the user selecting one stored recognition template before said comparing.

Masao teaches the user selecting from the plurality of voice color data stored which one skilled would provide as requiring either multiple buttons being depressed or one hotkey-like button being depressed.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that each stored recognition template corresponds to a key on a keypad of the wireless device further comprising the user selecting one stored recognition template before said comparing, to provide means for user selection via a keypad button being depressed.

Claim 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Masao as applied to claim 1 and further in view of Cave US 5,822,404 (hereafter Cave).

As per **claim 28**, Masao teaches claim 1 **but is silent on** wherein the first criterion is compensation for a hearing deficiency of a remote caller.

Art Unit: 2683

Cave teaches call connections between many different call systems and formats including a hearing-impaired system - Turning first to FIG. 1, it will be seen that system 10 comprises a plurality of terminal devices 20A through 20G connected to IIRU 30 via a plurality of interconnecting links 40A through 40G. It will be appreciated that the present invention is not limited to specific types of terminal devices, but that terminal devices 20A through 20G are shown for illustrative purposes. These illustrated exemplary terminal devices are: conventional telephone (20A), fax machine (20B), standard desktop computer (20C), multimedia desktop computer (20D), enhanced telephone with display (20E), home entertainment center (20F), and cellular/wireless telephone (20G). Other terminal devices not illustrated may include a personal communications system (PCS), a hearing impaired terminal, or a pager (abstract, C3, L25-41 and figure 1).

Hence, one skilled would provide for when the criterion is compensation for a hearing deficiency in remote caller.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Masao, such that the first criterion is compensation for a hearing deficiency of a remote caller, to provide means for the system to interoperate with hearing impaired persons.

Claim 55 rejected under 35 U.S.C. 103(a) as being unpatentable over Masao as applied to claim 41 and further in view of McCloughlin and Cave.

As per **claim 55**, Masao teaches claim 52 **but is silent on** wherein the particular frequency is boosted to compensate for a hearing deficiency of the remote caller.

McLoughlin teaches use of a filter/processor to alter frequency characteristics of speech and reads on boosting a particular frequency [Abstract and page 1, L29-34]. The examiner notes that boosting a higher frequency (eg. increasing Treble) allows a voice signal to be more clear as opposed to boosting a lower frequency (eg. increasing Bass). Increased Treble would help a hearing deficient person to hear the transmitted/received voice better.

Cave teaches interoperability with hearing impaired users who may be calling remotely.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to Masao, such that frequency is boosted to compensate for hearing deficient remote caller, to provide means for remote caller to better understand a phone conversation if/when they are hearing impaired.

Allowable Subject Matter

Claims 32-38 and 60-65 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

These claims recite highly specific designs not found in the prior art cited.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1. Kohen et al. US 4,823,380
2. Hardy US 6,115,465
3. McCanney US 4,241,235
4. Goldberg et al. US 6,404,872.
5. Blanton et al. US 5,113,449

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen D'Agosta

